950 MW OPERATION

VAR Support & Converter Station

What provisions need to be met for two units at 950 MW gross?

Maximum steam flow limit - how do you control and limit maximum steam flow limit of 6,900,000 lb/hr?

Safety valves/main steam, drum, cold reheat and hot reheat/ do not relieve until an over pressure condition. Essentially we no longer have an over pressure condition available. If we do have pressure excursion and lift safeties, we will have far exceeded our steam flow limit.

Alarms:

Suction Pressure Override
Limit needs to be raised up
Limiting factor during test - unstable furnace suction
Pressure due to ID fan limit

Baghouse: Low differential pressure indication problem need to rescale transmitters (inlet and outlet duct pressure) range dropped below -15" wc and -20" wc, so D/P defaulted to 5" wc (actual measured at 7.5" wc).

Vibration: BFPT U2B - evaluate balancing turbine
ID fans - evaluate high speed balancing

Station Instrumentation: Temperatures, main steam & hot reheat temperatures are off 4 to 5 degrees, investigate calibration offset to be applied to data acquisition system.

Main Steam Sprays: (Limiting maximum tube metal temperatures)
Evaluate changing main steam spray control where primary (first stage) sprays will limit maximum tube metal temperature of secondary pendents as well as secondary superheat intermediate and outlet pendents.

EQUIPMENT

Turbine Operation

Sliding pressure: 2350 - 2375 psi
No over pressure condition is allowed, would exceed maximum steam flow.

Booster Boiler Feedpumps: Requires three pump operation (versus two pump)
(Low differential pressure alarm)

PA fan: During this test which was abnormal (six pulv operation, PA duct press at 47" wc) close to running out of PA damper position.

Believe we can reduce PA flow and use high speed operation for bad coal.

Reduce PA flow requirements:

(1) Reduce PA flow through pulverizers (new target).

(2) Recalibrate at burner lines versus PA inlet duct to pulv.

(3) Rebalance burner lines with restrictors.

(4) Primary air heaters - look at reducing seal leakage across primary air heaters at the minimum reduce seal clearances to OEM recommendations.

ID fan links: Overcurrent alarms on numerous ID fan links.

Auxiliary Power: 2A2 & 2B2 aux buses low voltage sagged to 6400 volts.

Boiler Feed Pump - modification: U2B upgrade looks good, but still need to conduct performance test at specified conditions.

Burners/NOx Requirements: Need to replace U2 burners due to pre-existing mechanical damage (Unit 1 burners have already been replaced). Replacement needs to be with Unit 1 redesign or a better equivalent. Would highly recommend installing overfire air parts to give more operational flexibility to achieve lower NOx emission rates (0.40 lb/mbtu?).

Boiler Tubes - Additional superheat surface area: During the performance test, we were able to achieve mainsteam and reheat temperatures without a lot of problems. We had a lot of reheat temperature and RH bias dampers were at minimum of 40 So.

Due to the expense of additional primary superheat surface area and not a huge payoff of additional main steam temperature, we suggest looking at additional secondary superheat sootblowers as an alternative.

Pulverizer: Rotating throats.

Pulverizer: Pyrites removal system.

Cooling Tower: Helper cooling towers will be added and tied into the system during Spring 2003.

Circulating Water Pumps: CWP upgrade will take place to increase circulating water flow. Impellers of all 7 CWP will be changed out and pumps overhauled.

ADDITIONAL TESTING

HP Turbine Testing: 30 day test
Target date: 5/7/02
YWO/2385/985 MWGross

Boiler Feed Pump Tests: U2B
Target date: 5/13/02

Air Heater Leakage Tests: For Sec Air Heater & Primary Air Heater
Target date: 5/22/02